

## Proposal for workshops – AGILE 2023

Delft, Tuesday 13 June 2023

<https://agile-online.org/conference-2023>

### 1. Workshop name/title (and acronym is applicable)

GeoAI with ArcGIS

### 2. Description of the workshop by listing topic(s), objective(s) and planned outcome(s)

#### 2.1 Topic(s)

Technology, Methodology, and Non-Profit Organization use cases. GeoAI, Deep Learning, Feature Extraction, Object Detection, Pixel Classification, Basemap Automation

#### 2.2 Objective(s)

Full review of GeoAI possibilities using the ArcGIS platform which most universities already have access to. Provide some useful examples of realworld use cases.

#### 2.3 Planned outcome(s)

Full review of GeoAI possibilities using the ArcGIS platform; attendees may propose follow-on activities

### 3. Abstract

GeoAI within and using ArcGIS has taken advantage of the growing availability of cloud computing, and now is being applied in a wide range of organizations in various fields. This is matched by strong growth in the imagery industry including UAVs. In this workshop we demonstrate cloud-based imagery storage and analysis with ArcGIS in sectors like Agriculture, Humanitarian Aid and Disaster Response, Development and Urban planning, and more. We will explore the different products that are GeoAI enabled and will work with the different deep learning resources accessible via the ArcGIS Living Atlas of the World. Attendees of this workshop will learn how to go through a deep learning workflow. We will

take a close look at creating training data, training new models, fine-tuning existing models and inferencing within ArcGIS. Finally we cover post processing and data sharing workflows within ArcGIS. The software and data are provided.

**4. Short description of the intended length (half or full day) and the format of the workshop**

Half day, bring your own laptop (software to be installed beforehand)

**5. Brief statement of the relevance of the workshop for AGILE**

Practical examples and methodologies for deep learning combining the ArcGIS platform with open source projects

**6. What is the approximate number of expected participants?**

unlimited

**7. Names and e-mail addresses of the organizing member(s)**

*Leading AGILE member (or sponsor) and contact person: **Michael Gould (UJI and Esri) and Rami Alouta (Esri, workshop presenter)***

*Contributing AGILE members (including the persons involved) – at least one seconding AGILE member is needed: **NOVA-IMS, Lisbon (Prof Marco Painho)***

*Contributing non-AGILE members (including the persons involved) – if applicable:*

*Organizing Committee (if applicable):*

*Programme Committee (if applicable):*

**8. Additional information about previous workshops, if held.**

This workshop was presented at the 2022 GeoMundus conference in Lisbon, and virtual for ITC Faculty Geo-Information Science and Earth Observation and IAEA (International Atomic Energy Agency). The evaluation of attendees was positive.

**9. Expected resources needed**

*Just a projector and stable internet connection.*

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**10. Other information**

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